JOURNAL OF THE FRANKLIN INSTITUTE

INDEX TO VOLUME 329

1992

SUBJECT INDEX

Papers are listed under subject headings with first author's name in parentheses. All authors are listed with titles of their papers in alphabetical order in the Author Index.

A

Acoustic cavities (Roumeliotis), 413
Acoustic eigenfrequencies (Roumeliotis), 413, 727
Active network (Wang), 333
Adaptive control (McCullough), 967
Adaptive controller (Mossayebi), 135
Adaptive filtering (Bose), 765
Adaptive robot control (Tzafestas), 1
Airy stress function (Sosa), 817
Algebraic loops (Gawthrop), 291
Analog filters (Nosratinia), 737
Analytical mechanics (Arczewski), 469, 483, 493
Applied mathematics (Chun), 1147
Asymptotic normality (Pardo), 907

B

Bond graph (Sueur), 1109, 1129
Bond graphs (Gawthrop), 291
Bond graphs (Karnopp), 65
Bond graphs (Maschke), 923
Bond graphs (Zeid), 605
Bondgraph simulation (Thoma), 999

C

Chaos (Mossayebi), 135
Charge excitation (Schieber), 715
Chebychev filters (Nosratinia), 737
Chinese Remainder Theorem (Ku), 93
Circuits and systems (Zhao), 1011
Computer-aided method (Al-Assadi), 1041
Control system (Chen), 829
Convective instability (Daniels), 77
Convex polytopes (Bača), 539
Cross-ply laminates (Adali), 655

D

2-D filtering (Mazinani), 127
Decentralized control (Chen), 25
Decoupling (Paraskevopoulos), 347
Delay differential systems (Foda), 317
Differential equations (Daniels), 77
Differential equations (Sloss), 667
Digital filtering (Bose), 765
Digital filters (Brown), 893
Digital filters (Hinamoto), 1063
Digital signal processing (Hinamoto), 371
Digital systems (Lee), 583
Discrete saturating systems (Hsiao), 975
Discrete systems (Brown), 15
Discretization of continuous data systems (Al-Assadi), 1041
Dispersion (Lin), 403
Diversity (Pardo), 907
Dynamics (Karnopp), 65

E

Electric influence (Schieber), 715
Electromagnetic fields (Mor), 305
Elementary particle physics (Marx), 111
Equal path length (Samaddar), 37

Journal of the Franklin Institute
Vol. 329, No. 6, pp. 1179–1185, 1992
Pergamon Press Ltd. Printed in Great Britain

F

Fault identification (Choy), 697
Filter approximations (Egbert), 457
Flexible robot (Sueur), 1109

G

Game theory applications (Douligeris), 383
Gear trains (Hsu), 859
Graph theory (Hsu), 99
Graph theory (Zhao), 1011
Graph theory applications (Arczewski), 469, 483, 493
Graphs (Hsu), 775
Grassmann algebra (Sueur), 1129
Gyroscopic systems (Bahar), 679

H

Hamiltonian systems (Maschke), 923
Higher order statistics (Chaparro), 511

I

Insulation level computation (Papadopoulos), 273
Integrals of Bessel functions (Miller), 155, 563
Interval analysis (Bao), 743
Inverse conduction (Huang), 751
Inversion in remote sensing (Vemuri), 241
Isomorphic identification (Hsu), 99

K

Kampé de Fériet functions (Miller), 155
Kinematic analysis (Hsu), 859
Kinematic chains (Hsu), 775

L

L^{∞} norm (Caponetto), 591
Labeling (Bača), 539
Least squares (Lalonde), 215

M

Magic labeling (Bača), 549
Matching theory (Farrell), 45
Matrix cracks (Adali), 655
Matrix exponential (Bahar), 679
Maximum principle (Sadek), 207
Mechanical engineering (Chun), 1147
Model order reduction (Bandekas), 521
Model reduction (Lalonde), 215
Model reduction (Lee), 583
Model reduction (Lucas), 171
Model reduction (Mossayebi), 145
Modelling (Sueur), 1129
Moment detectors (Ammar), 445
Monte Carlo method (Liu), 181
Motion strategy (Karnopp), 881
Multibody systems (Zeid), 605
Multidimensional and multipass processes (Foda), 317
Multidimensional signals and systems (Hinamoto), 371
Multidimensional systems (Hinamoto), 1063
Multivariable control systems (Chiang), 843

N

Network analysis (Wang), 333
Neural networks (McCullough), 967
Neural networks (Vemuri), 241
Non-destructive testing (Mor), 305
Nonlinear systems (Mossayebi), 145

O

Open–closed-loop control of a thin plate (Sadek), 207
Optimal controller design (Hsiao), 975
Optical discs (Rebane), 1081
Optimal heating rate (Chen), 195
Optimal multi-file read policies (Rebane), 1081
Optimal servodesign (Chen), 829
Overhead power transmission lines (Papadopoulos), 273

P

Phase locked loops (Stensby), 283
Phased array antenna system (Samaddar), 37
Plane graphs (Bača), 549
Plane heat source (Chen), 195
PLLs (Stensby), 283

Pointwise control (Blanton), 801
Pole-placement designs (Chiang), 843
Porosity (Lin), 403
Porous materials (Lin), 85
Positive real functions (Colgate), 429
Positronium (Marx), 869

Q

Quantum electrodynamics (Marx), 869
Quantum theory (Marx), 637

R

Real-time simulation (Niu), 791
Recursive digital filters (Mazinani), 127
Reduction techniques (Bandekas), 521
Relativistic quantum mechanics (Marx), 111, 637
Remainder theorem (Ku), 93
Rigid rotor control (Fan), 1153
Robot control (Tzafestas), 1
Robust control (Chen), 25
Robust control (Niu), 791
Rook theory (Farrell), 45
Rotor control (Fan), 1153

S

Sensitivity (Egbert), 457
Signal processing (Hopper), 555
Sinusoidal pulse radiation (Samaddar), 259
Solution of nonlinear equations (Bao), 743
Speech recognition (Hopper), 555
Spherical cavities (Roumeliotis), 727
Stability (Brown), 893
Stability (Colgate), 429
Stability equation method (Lucas), 171
State feedback (Paraskevopoulos), 347
State space technique in elasticity (Sosa), 817
Stochastic signal detection (Ammar), 445
Structural fault identification (Choy), 697
Struve functions (Miller), 563
System identification (Chaparro), 511
System stability (Brown), 15

T

Telecommunications (Douligeris), 383
Thermofluid systems (Thoma), 999
Thin plates (Blanton), 801
Transfer matrix (Caponetto), 591
Transient conduction (Huang), 751
Transient radiation (Samaddar), 259
Transport coefficients (Liu), 181

V

Vibrationless motion (Karnopp), 881

W

Walsh series (Sloss), 667
Water infiltration (Lin), 85

AUTHOR INDEX

Full titles are listed only under first authors; all co-authors are cross-referenced.

A

Adali, S.: Effect of transverse matrix cracks on the frequencies of unsymmetrical, cross-ply laminates, 655
Adali, S.: See Sadek, I. S., 207
Adhami, R.: See Hopper, G., 555
Agathoklis, P.: See Foda, S., 317
Ahmadi, M.: See Mazinani, A., 127
Ahmadi, M.: See Nosratinia, A., 737
Al-Assadi, S. A. K.: Frequency-weighted least-squared error for optimal discretization of continuous data control systems, 1041
Ammar, M. M.: Stochastic signal detection in nearby-Gaussian noise using moment detectors, 445
Arczewski, K.: Graph theoretical approach—I. Determination of kinetic energy for a class of particle systems, 469
Arczewski, K.: Graph theoretical approach—II. Determination of generalized forces for a class of systems consisting of particles and springs, 483
Arczewski, K.: Graph theoretical approach—III. Equations of motion of a class of constrained particle systems, 493

B

Bača, M.: Labelings of a certain class of convex polytopes, 539
Bača, M.: On magic labellings of type (1, 1, 1) for the special class of plane graphs, 549
Bahar, L. Y.: Matrix analysis of some linear gyroscopic systems, 679
Bahar, L. Y.: See Sosa, H. A., 817
Bandekas, D. V.: Time moment and Padé approximation methods applied to the order reduction of MIMO linear systems, 521
Bao, P. G.: Convergence of Newton-like methods for nonlinear systems, 743
Bendekas, D. V.: See Papadopoulos, D. P., 273
Blanton, M. L.: Optimal active pointwise control of vibrating thin plates, 801
Blyth, W. F.: See Sloss, B. G., 667
Bose, T.: System identification and filtering using pseudo random binary inputs, 765
Breedveld, P. C.: See Maschke, B. M., 923
Brown, D. P.: Stability of n-order discrete systems with overflow arithmetic, 15
Brown, D. P.: Stability of n-order state space digital filters with integer arithmetic, 893
Bruch Jr, J. C.: See Sadek, I. S., 207

C

Caponetto, R.: A direct method for computing the L^{∞} norm of a transfer matrix, 591
Chaparro, L. F.: Identification of mixed-phase systems from frequency slices of the bispectrum, 511
Chen, C. J.: Optimal heating of a slab with two plane heat sources of timewise varying strength, 195
Chen, M.-S.: Optimal servodesign of the SISO estimator-based control system, 829
Chen, S.-T.: See Fan, Y.-H., 1153
Chen, W.-K.: See Wang, H.-Y., 333
Chen, Y. H.: Decentralized robust control design for large-scale uncertain systems: the uncertainty is time-varying, 25
Chiang, H.-K.: Pole-placement designs via novel block canonical forms for multivariable control systems, 843
Choy, F. K.: Fault identification in beam structures, 697
Chun, Y. W.: Two-dimensional heat transfer problem using the boundary integral equation, 1147
Chung, C.-H.: See Zeid, A., 605
Colgate, J. E.: Strictly positive real admittances for coupled stability, 429

D

Daniels, P. G.: A note on the solution of a third-order eigenvalue problem arising in convective instability, 77
Dauphin-Tanguy, G.: See Sueur, C., 1109, 1129
De Abreu-Garcia, J. A.: See Lalonde, R. J., 215
De Abreu-Garcia, J. A.: See Mossayebi, F., 145
De Abreu-Garcia, J. A.: See Niu, X., 791
Douligeris, C.: A game theoretic perspective to flow control in telecommunication networks, 383

E

Egbert, R. I.: Order sensitivity and its applications, 457

F

Fan, Y.-H.: Active control of an asymmetrical rigid rotor supported by magnetic bearings, 1153
Farrell, E. J.: On the theory of matching equivalent graphs and rook equivalent chessboards, 45
Fikioris, J. G.: See Roumeliotis, J. A., 413
Fisher, F. E.: See Karnopp, B. H., 881
Foda, S.: Control of the metal rolling process: a multidimensional system approach, 317
Fortuna, L.: See Caponetto, R., 591

G

Gavril, S.: See Mor, A., 305
Gawthrop, P. J.: Causal augmentation of bond graphs with algebraic loops, 291

H

Hamed, M.: See Papadopoulos, D. P., 273
Hartley, T. T.: See Lalonde, R. J., 215
Hartley, T. T.: See Mossayebi, F., 135, 145
Hartley, T. T.: See Niu, X., 791
Hinamoto, T.: Design of 2-D IIR digital filters with symmetry and constant group delays, 371
Hinamoto, T.: Synthesis of 2-D separable denominator digital filters with low sensitivity, 1063
Holländer, I.: See Bača, M., 539
Hopper, G.: An FFT-based speech recognition system, 555
Hsiao, F.-H.: Robust LQG optimal controller design for multivariable discrete saturating systems with noise spectral uncertainties, and nonlinear time-varying unmodeled dynamics, 975
Hsieh, J.-G.: See Hsiao, F.-H., 975
Hsu, C.-H.: Topological code of graphs, 99
Hsu, C.-H.: Enumeration of basic kinematic chains with simple and multiple joints, 775
Hsu, C.-H.: A graph notation for the kinematic analysis of differential gear trains, 859
Huang, C. H.: Inverse problem of determining the unknown strength of an internal plane heat source, 751
Huang, Y. F.: See Ammar, M. M., 445
Hwang, C.: See Lee, Y.-C., 583

J

Jang, G.-S.: See Vemuri, V., 241

K

Kalobatsos, B.: See Tzafestas, S., 1
Kanellopoulos, J. D.: See Roumeliotis, J. A., 413, 727
Karnopp, B. H.: A strategy for moving a mass from one point to another, 881
Karnopp, D.: An approach to derivative causality in bond graph models of mechanical systems, 65
Koumboulis, F. N.: See Paraskevopoulos, P. N., 347
Ku, Y. H.: The Chinese Remainder Theorem, 93
Kung, F.-C.: See Chen, M.-S., 829
Kwatny, H. G.: See Bahar, L. Y., 679

L

Lalonde, R. J.: Least squares model reduction, 215
Lam, K.-T.: See Hsu, C.-H., 99
Lashkari, R. S.: See Mazinani, A., 127
Lee, A.-C.: See Fan, Y.-H., 1153
Lee, Y.-C.: Order reduction of z-transfer functions via multipoint Jordan continued-fraction expansion, 583
Leondes, C. T.: See Rebane, G. J., 1081
Liang, R.: See Choy, F. K., 697
Lin, S. H.: Water infiltration in porous materials, 85

Lin, S. H.: Longitudinal dispersion in porous media with random variable porosity, 403
Liu, J.: Evaluation of transport coefficients in nitrogen by the Monte Carlo method, 181
Lucas, T. N.: A tabular approach to the stability equation method, 171
Luo, L.: See Chaparro, L. F., 511

M

Makeris, R. K.: See Adali, S., 655
Marx, E.: Elementary particle physics in the Dalton manner, 111
Marx, E.: Relativistic quantum mechanics of interacting particles, 637
Marx, E.: Positronium in relativistic quantum mechanics, 869
Maschke, B. M.: An intrinsic Hamiltonian formulation of network dynamics: non-standard Poisson structures and gyrators, 923
Mazinani, A.: A novel approach to the design of 2-D recursive digital filters, 127
Mazumdar, R.: See Douligeris, C., 383
McCullough, C. L.: A neural network adaptive controller for a class of nonlinear systems, 967
Menendez, M. L.: See Pardo, L., 907
Miller, A. R.: Reduction formulas for Kampé de Fénet functions associated with certain classes of incomplete Lipschitz–Hankel type integrals of cylindrical functions, 155
Miller, A. R.: Incomplete Lipschitz-Hankel integrals of Struve functions, 563
Mitra, S.: See Bose, T., 765
Mor, A.: On the operation of the rectangular eddy current probe coil at an arbitrary inclination over a thin conductor sheet, 305
Mossayebi, F.: Chaos in an adaptive controller, 135
Mossayebi, F.: A fundamental theorem for the model reduction of nonlinear systems, 145
Muneyasu, M.: See Hinamoto, T., 371, 1063
Muscato, G.: See Caponetto, R., 591

N

Niu, X.: Robustness analysis of two-step integrators with uncertainty in the system model, 791
Nosratinia, A.: A transformation on Chebychev approximation resulting in improved delay characteristics, 737
Nunnari, G.: See Caponetto, R., 591

O

Ozisik, M. N.: See Chen, C. J., 195
Ozisik, M. N.: See Huang, C. H., 751

P

Papadopoulos, D. P.: A practical concept for evaluating the insulation level in overhead power transmission lines, 273
Papadopoulos, D. P.: See Bandekas, D. V., 521
Paraskevopoulos, P. N.: A new approach to the decoupling problem of linear time-invariant systems, 347
Pardo, J. A.: See Pardo, L., 907
Pardo, L.: Unified (r, s)-entropy as an index of diversity, 907

R

Raju, G. R. G.: See Liu, J., 181
Rebane, G. J.: Optimal multi-file read policies for optical discs, 1081
Rokne, J. G.: See Bao, P. G., 743
Roumeliotis, J. A.: Acoustic eigenfrequencies of a cylindrical/rectangular cavity with an eccentric inner small sphere, 413
Roumeliotis, J. A.: Acoustic eigenfrequencies and modes in a soft-walled spherical cavity with an eccentric inner small sphere, 727

S

Sadek, I. S.: Vibration damping of a thin plate by optimal open- and closed-loop control forces, 207
Sadek, I. S.: See Blanton, M. L., 801
Samaddar, S. N.: Equal path length design for a phased array antenna system, 37
Samaddar, S. N.: Transient radiation of a single-cycle sinusoidal pulse from a thin dipole, 259
van der Schaft, A. J.: See Maschke, B. M., 923
Schieber, D.: Charge excitation through electric influence, 715
Shieh, L. S.: See Lee, Y.-C., 583
Shridhar, M.: See Mazinani, A., 127
Sloss, B. G.: A pseudospectral Walsh function method, 667
Sloss, J. M.: See Sadek, I. S., 207
Smith, L.: See Gawthrop, P. J., 291
Soltis, J. J.: See Nosratinia, A., 737

Sosa, H. A.: Transition from Airy stress function to state space formulation of elasticity, 817
Srivastava, H. M.; See Miller, A. R., 155
Stavrakakis, G.: See Tzafestas, S., 1
Stensby, J.: A parametrically driven PLL lock detector, 283
Su, W. J.: See Wang, H.-Y., 333
Sueur, C.: Bond-graph modelling of flexible robots: the residual flexibility, 1109
Sueur, C.: Grassman algebra and bond-graph modelling, 1129
Sun, X.: See Ku, Y. H., 93
Sun, Y.-Y.: See Chiang, H.-K., 843

T

Takao, T.: See Hinamoto, T., 1063
Thoma, J.: Thermofluid systems by multi-bond-graphs, 999
Toda, H.: See Hinamoto, T., 371
Tsai, J. S. H.: See Chen, M.-S., 829
Tsai, J. S. H.: See Chiang, H.-K., 843
Tzafestas, S.: Some results on the autonomous trajectory generation and adaptive control of industrial robots, 1

V

Vemuri, V.: Inversion of Fredholm integral equations of the first kind with fully connected neural networks, 241

W

Wang, H.-Y.: The indefinite-admittance matrix of a constrained active network, 333
Weinstein, M.: See Daniels, P. G., 77

X

Xu, P.: See Choy, F. K., 697

Y

Yoon, B. O.: See Karnopp, B. H., 881

Z

Zagorianos, A.: See Tzafestas, S., 1
Zeid, A.: Bond graph modeling of multibody systems: a library of three-dimensional joints, 605
Zhao, H.-A.: Matrix representation of a W-graph, 1011